

Francis E. DROUET (1907-1982)

by C. W. REIMER*



Dr. Francis (Elliott) Drouet, eminent phycologist and scholar, died in Philadelphia, Pennsylvania on December 5, 1982 at the age of 75, shortly after completion and publication of the last of a five-volume monographic series on the family Myxophyceae (blue-green algae).

Born March 1, 1907 in Philadelphia of printer Robert R. Drouet and Ella S. Drouet (née Aymer), he was the third of four sons. Both grammar school and high school education were completed in Independence, Missouri after which he enrolled at the University of Missouri where he earned the bachelor and master of arts degrees and, in 1931, the doctor of philosophy degree with a major in botany. He remained at the University as herbarium assistant until 1935 when he was commissioned by the Brazilian Government as botanist for a one-year research project. From 1936 to 1938, Dr. Drouet was recipient of the Seessel Fellowship in Botany at Yale University.

The following 20 years were spent as curator of the Cryptogamic Herbarium at the Chicago Natural History Museum. From 1958 to 1961 he served as Research Associate and Research Professor respectively at New Mexico Highlands University and the University of Arizona. He assumed his final active professional position in 1961 at the Academy of Natural Sciences in Philadelphia with the appointment of Research Fellow and Curator of the Algae Collection. In 1975 Dr. Drouet was retired, but continued his research at the Academy as Curator Emeritus until his death in 1982.

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Although excited about all of his botanical subjects while studying at the University of Missouri, Dr. Drouet became particularly interested in botanical taxonomy. Literature and herbarium aids were rather good in the area of flowering plants, but special problems developed with the identification of certain groups of the algae. He first sought assistance through correspondence with the leading phycologists of the time. Although this was helpful, there remained problems with the identification of many blue-green algae which he had collected. In his own words there was «something very odd about growth and morphology in the blue-green algae» which didn't seem to fit the current concepts of classification. He finally decided that the only solution to the dilemma was to find answers for himself. Thus, with his well-known qualities of patience, determination and singular drive, he set out to dedicate a major part of his professional life to this self-generated challenge.

Earlier papers written by him on blue-green algae often contained descriptions of new species. As his experience increased and plans for a monographic approach took shape, this trend diminished. He was developing a different approach to the classification of these algae. For such a monographic study, he deemed it essential to «review» all possible specimens available which had been identified as blue-green algae.

This «review» meant re-examination of every collection of blue-green algae in his own burgeoning personal herbarium (including his own previously identified specimens) plus those in all other herbaria known to him. He was constantly writing to authors and curators for material as well as spending weeks or months in United States and European herbaria ferreting out historical collections of blue-green algae for scrutiny.

Over the years he managed to deposit specimens in all the world's herbaria and it is probably safe to say that Dr. Drouet's handwritten annotations on other's collections are to be found in every cryptogamic herbarium of any size in the world; almost akin to the legendary «Kilroy» signature.

The new approach to the taxonomy of the blue-green algae was first evinced in the initial monograph on the coccoid blue-greens (DROUET and DAILY, 1956). As a prelude to succeeding monographs on the filamentous blue-greens, he published separately some work on individual species of the Oscillatoriaceae, collectively known of as the «ecophenepapers». This data demonstrated the likelihood of a tremendous «masking effect» of various environmental factors on the morphological signals denoting the actual species. In these papers and in the introduction to each of the five volumes he succinctly, artfully and scholarly described his findings.

Being associated with herbaria for a good part of his life, Dr. Drouet was sometimes considered as one who looked only at dead and dried material from herbarium sheets. Those who have worked with him both in the field and in the laboratory can attest to the fact that he was quite familiar with living algae of all sorts and did spend countless hours observing living cells under the microscope. Oftentimes he would even re-activate dried material from herbarium sheets in order to observe cells in a living state.

His collecting trips were many. While in Missouri, he collected, examined and identified algae from all parts of the state including major areas of adjacent states. He once took a solo trip by bus, bicycle and on foot collecting and microscopically examining samples of algae along the Gulf Coast from Louisiana to Georgia and Florida. Several long excursions were made throughout Mexico and the Southwestern United States and ... actually, there are but few areas of the U. S. from which algae have not been extracted by Dr. Drouet.

Although he ceased active participation in the Nomenclature Section of the International Botanical Congress after the 1950 meeting in Stockholm, he was quite attentive to the Rules of Botanical Nomenclature except in a case or two when his best conscience could not permit it.

A great consternation of his was the matter of later starting dates (Art. 13)¹. In spite of the fact that he found little logic to this rule he, nevertheless, took a great deal of extra

1. Stafleu, F.A. (ed.), International Code of Botanical Nomenclature, Regnum Vegetabile, vol. 97, pp. 10-12, 1978.

time and energy to conform to it. At the same time he arranged the synonymy in the monographs so that the actual priority-name is easy to ascertain.

Dr. Drouet preferred to be considered as a botanist. Indeed, he did know flowering plant taxonomy quite well, was surprisingly familiar with all groups of algae and certainly not a stranger to the remaining cryptogams. He was fond of growing plants in his home even though his interest in horticulture per se was not great. His home contained some of the usual house plants, but his special delight was in germinating seeds of such plant genera as Ginko, Palma, Gymnocladus, Persea, Desmodium, Convolvulus, etc. just to see if he could get them to grow and keep them alive. Not surprisingly, the soil around these plants was usually quite replete with growths of various blue-green algae, all of which he periodically examined under the microscope.

This quiet-mannered, soft-voiced, retiring scientist was quite affable within small groups of colleagues with whom he was comfortable. His knowledge of history and literature was a constant surprise to all. Many are the quotes and quips he could recall from the writings of Mark Twain, G.B. Shaw, etc. Current issues of Harper's Weekly and Atlantic Monthly were also a part of his more leisure reading.

How many things must be left unsaid? As a person and as a scientist Dr. Drouet occupied one of those few positions in history which will always leave some sort of unfillable void. The total physical and mental energy spent on the taxonomy of this single group of algae is staggering. As for his scientific legacy; it appears that some time will yet elapse before some of the shrouds of temporal reaction will give way to a positive search for the biological realities which his mind synthesized from field experiences, microscopic observations and literature scrutiny. To his satisfaction, he carefully and painstakingly assembled all of this for the future in his five volumes.

His personal herbarium, undoubtedly the largest curated collection of blue-green algae in the world, was bequeathed (with an in perpetuity maintenance endowment) to the Smithsonian Institution in Washington, D. C. along with his personal reprint collection, library volumes and microscope, where it is available for use by serious students of the algae. Aside from the uniqueness of the herbarium, his library contained some volumes of earlier literature which have never been found elsewhere.

Following is a list of his publications :

PUBLICATIONS OF FRANCIS DROUET

- 1930 A list of algae from Columbia, Missouri. *Studies*, 5 : 3-21.
 1932 A list of algae from Missouri. *Bull. Torrey Bot. Club*, 59 : 289-300.
 1933 Algal vegetation of the large Ozark springs. *Trans. Amer. Micr. Soc.*, 52 : 83-100.
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 1934 New or interesting Myxophyceae from Missouri. *Bot. Gaz.*, 85 : 695-701.
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 1935 The morphology of *Gonyostomum semen* from Woods Hole, Massachusetts. *Biol. Bull.*, 68 : 422-439. (Second author : Aaron Cohen)
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 1936 Notes on the flora of Columbia, Missouri. III. *Rhodora*, 38 : 191-195.
 1936 Seis Meses de Estudos Botânicos no Nordeste. *Bol. da Inspectoria de Seccas*, 5 : 37-40.
 1937 The Brazilian Myxophyceae. 1. *Amer. J. Bot.*, 24 : 598-608.
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 1937 Further observations on *Gonyostomum semen*. *Bot. Gaz.*, 98 : 617-618.
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- 1938 The Oscillatoriaceae of southern Massachusetts. *Rhodora*, 40 : 222-241, 255-273.
- 1938 Some Myxophyceae from Nantucket Island, Massachusetts. *Rhodora*, 40 : 74-76.
- 1938 Taylor's Marine Algae. *Rhodora*, 40 : 323 (A review).
- 1939 The Cryptogams or non-flowering plants - What they are, and their importance. *Field Mus. News*, 10 : 4.
- 1939 Francis Wolle's Filamentous Myxophyceae. *Field Mus. Nat. Hist., Bot. Ser.*, 20 : 17-64.
- 1939 The Myxophyceae of Maryland. *Field Mus. Nat. Hist., Bot. Ser.*, 20 : 1-14.
- 1939 The planktonic freshwater species of *Microcystis*. *Field Mus. Nat. Hist., Bot. Ser.*, 20 : 67-83. (Second author : W. A. Daily)
- 1940 *Lyngbya Taylorii* Drouet & Strickland sp. nov. *Amer. J. Bot.*, 27 (8) : 631.
- 1941 Intertidal vegetation of North Atlantic coast shown in new exhibit. *Field Mus. News*, 12 (10) : 1-2.
- 1942 V. J. Chapman's An introduction to the study of algae. *Amer. Midl. Nat.*, 27 : 262-272 (A review)
- 1942 The filamentous Myxophyceae of Jamaica. *Field Mus. Nat. Hist., Bot. Ser.*, 20 : 107-122.
- 1942 Studies in Myxophyceae. I. *Field Mus. Nat. Hist., Bot. Ser.*, 20 : 125-141.
- 1943 Myxophyceae of eastern California and western Nevada. *Field Mus. Nat. Hist., Bot. Ser.*, 20 : 145-176.
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- 1981 Summary of the classification of blue-green algae. (Separate reprint from *Beih. Nova Hedwigia* 66 with additions and corrections). J. Cramer : 209 pp.

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